DRAFT ALASKA GROUNDFISH FISHERIES PROGRAMMATIC SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT EXECUTIVE SUMMARY

INTRODUCTION

This executive summary provides an overview of the findings of the draft Alaska Groundfish Fisheries Programmatic Supplemental Environment Impact Statement (SEIS). For more detailed information, the reader should refer to the draft SEIS and attached appendices.

This programmatic SEIS has multiple purposes. A planning and reference document is needed to accurately describe the current management regime for groundfish fisheries in Alaska. It must also describe and analyze current knowledge about the physical, biological, and human environment in order to assess impacts caused by past and current fishery activities. Significant changes have occurred in the environment since the original environmental impact statements (EISs) for the Gulf of Alaska (GOA) and Bering Sea and Aleutian Islands (BSAI) groundfish fishery management plans were published approximately 20 years ago. While many environmental assessments (EAs) and several EISs have been prepared for fishery plan amendments over the ensuing years, none examined the groundfish fishery management plans (FMPs) at a programmatic level. The National Environmental Policy Act (NEPA) requires preparation of an EIS (or SEIS) when environmental changes have occurred. This SEIS is intended to bring both the decisionmaker and the public up to date on the current state of the environment. In addition, the programmatic SEIS will also serve as the environmental baseline that will be used to shape future management policy and a future range of potential management actions.

Additionally, this SEIS explains to decisionmakers and the public the effects of the current groundfish fishery management regime, as well as selected alternative management regimes, on the human environment to assess whether a different management regime should be implemented. For purposes of this programmatic SEIS, the National Marine Fisheries Service (NMFS) presumes that the Alaska groundfish fisheries result in some significant effects, both positive and negative, to the human and natural environments. This SEIS has been structured in a manner that identifies these effects (direct, indirect, and cumulative) to the extent possible, and explores alternative policies and actions that might serve to mitigate adverse impacts. It is anticipated that future NEPA documents will reference this SEIS when focusing on issues specific to the action being evaluated at that time. This programmatic SEIS may require periodic updates as new information and/or significant changes occur in relation to the fisheries or the environment.

DEFINING THE PROBLEM

A number of pressing issues face those who participate in and manage the Alaska groundfish fisheries. The range of issues includes the effects of the groundfish fisheries on the decline of Steller sea lions and other protected species, the effects of fishing gear on benthic habitat, excess fishing and processing capacity, and the effects of harvesting fish on the North Pacific marine ecosystem. Other notable issues include maintaining sustainable fisheries, reducing bycatch and waste, improving data gathering and enforcement of regulations, and providing economic stability for fishing communities. These ongoing issues have been prioritized by NMFS and the North Pacific Fishery Management Council (the Council) for purposes of research and management focus.

NEPA requires that a significant federal action (such as a federally authorized fishery) be evaluated for its potential effects on the natural and human environment. It is intended that this programmatic SEIS serve as the central environmental planning document for both the BSAI and GOA Groundfish FMPs. This goal will be achieved by:

- updating the original EISs by providing a historical review of how the groundfish fisheries and the environment have changed since publication of the original EISs;
- describing how new scientific and fishery information is being utilized;
- building upon the analysis contained in the 1998 SEIS for setting total allowable catch (TAC) by broadening its scope;
- describing the cumulative effects of past, present, and reasonably foreseeable future groundfish fisheries management on the marine ecosystem and the environment (to the extent possible); and
- analyzing the current and alternative management regimes to determine the potential impacts on the human environment.

WHAT IS A PROGRAMMATIC EIS?

A programmatic EIS is typically a broad, big picture environmental evaluation that examines a program such as fisheries management on a large scale. Federal agencies have been encouraged to develop "multi-tiered" EISs to streamline the NEPA process. This approach avoids repetition by referencing broad, program-oriented issues analyses in the programmatic SEIS when preparing subsequent EAs or EISs that focus on specific proposed federal actions. A programmatic EIS is usually prepared at the onset of a new federal program. In this case, the GOA and BSAI FMPs have been in place for approximately 20 years and this programmatic SEIS is being prepared to provide a comprehensive review of the FMPs.

SEIS Timeline

Notice of Intent	October 1999
Scoping Period and Meetings	October 1999 through December15, 1999
Scoping Report	April 2000
Preparation of Draft SEIS	May through November 2000
Distribution of Draft Programmatic SEIS	January 2001
Public Meetings	To be determined
Completion of Public Review of Draft SEIS	April 26, 2001
Final Programmatic SEIS	To be determined
Record of Decision	To be determined

Scope of this SEIS

NMFS determined this programmatic SEIS for the Alaska groundfish fisheries should provide a broad analysis of the effects of the GOA and BSAI groundfish FMPs on the areas under their management. The SEIS includes a cumulative impact analysis of actions that have occurred as a whole, and examines policies and potential future actions from a variety of environmental perspectives. By its programmatic nature, this SEIS takes a broad look at the issues and the alternatives, and is somewhat qualitative in nature. More case-specific, detailed analyses can be expected in the future as specific proposed management actions are evaluated in subsequent second-level tiered EAs or EISs. This programmatic SEIS provides the agency and the public with an analytical framework to

examine what environmental effects would result from other potential fisheries management regimes. Findings that flow from this analysis could result in FMP amendments that lead to formal rule-making and implementation of changes to the current management regime governing the groundfish fisheries off Alaska.

SEIS Organization

It will be readily apparent that the management of the Alaska groundfish fisheries is a large, complex program that continues to evolve as more information is obtained on the fishery resources, the marine ecosystem, and those that derive benefits from both. The programmatic SEIS provides a means of informing the public about Alaska groundfish management, the current regime, what is known and not known about the ecosystem, and the complex set of laws and regulations that apply to federal fisheries management. To meet these objectives, the document has been organized into a series of chapters and sections.

Chapter 2 provides an overview on fisheries policy, what it means, and how it is currently applied to the groundfish fisheries. Section 2.3.2 is a review of the principal laws that govern fisheries management in the United States. Section 2.4 introduces programmatic alternatives, which emphasize different potential approaches to managing the groundfish fisheries using frameworks that allow management flexibility. Current policy statements of each FMP are reviewed, as well as the actions taken by the Council over the last 10 years. The review of current policy also contrasts alternative policies that emphasize certain sets of fisheries management objectives more heavily than others. This approach captures the range of issues raised during the scoping process.

The federal action of this programmatic SEIS, the Alaska groundfish fisheries, and their management is described in Section 2.7. This section informs the reader about environmental conditions and the state of the groundfish fisheries prior to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and how the FMPs have evolved over time as new issues and new information have come to the forefront of policy decisionmaking. A detailed discussion addresses compliance with the Magnuson-Stevens Act, the BSAI and GOA groundfish FMPs, the characteristics of the commercial fisheries, and the fisheries management Council process. Chapter 2 concludes with summaries of the actions taken to comply with requirements of the Endangered Species Act and the Marine Mammal Protection Act.

Chapter 3 presents a synthesis of current knowledge of the environment affected by the FMPs. Section 3.1 is an overview of the physical environment and Section 3.2 presents what is known about the effects of fishing on that environment. Sections 3.3 through 3.7 describe the groundfish resources involved in the fishery and marine mammals, seabirds, and other fish species found in the Bering Sea and Gulf of Alaska. Section 3.8 provides information on what is known about contaminants in the region, and Section 3.9 is an overview on the interactions of climate, commercial fishing, and the marine ecosystem. Section 3.10 describes the harvesting and processing sector components of the groundfish fisheries, and the regions and communities that support fishing activities.

Chapter 4 is the heart of this SEIS analysis. This section evaluates the effects of groundfish fishing on the environment and how those effects might be altered by changes to the current fisheries management regime. Section 4.1 provides a description of the process NMFS used to develop the range of alternative fishery management regimes that illustrate the general environmental effects

of implementing an FMP. Agency analysts with expertise in fishery science and fisheries management were tasked with developing one or more hypothetical, or model, regimes for each programmatic policy alternative. Using the current FMPs as the baseline, analysts reviewed all of the management tools of the BSAI and GOA groundfish FMPs and tailored a hypothetical suite of actions that could reasonably serve as one method of achieving a particular set of policy objectives. Analysis of these model regimes, and contrasting them with the current or status quo regime, illustrates the general environmental effects of each programmatic policy alternative. This SEIS provides the Council, NMFS, and the public with information that can be used to guide future fishery management policy decisions.

Sections 4.2 through 4.9 evaluate the effects of the current status quo regime, and the hypothetical alternative management regimes from the perspective of key issue areas (e.g., marine mammals, target species, socioeconomic characteristics). Sections 4.10 through 4.12 provide general information on the effects of the alternative regimes on enforcement and management programs, on other environmental issues, and whether they provide opportunities for energy conservation potential. Section 4.13 presents results from the cumulative impacts analysis, and concludes with a chapter summarizing the general findings.

The Federal Action: Management and Authorization of the Alaska Groundfish Fisheries
The federal action in this SEIS is defined as the management of groundfish fisheries and the authorization of groundfish fishery activities off Alaska, pursuant to the *Fishery Management Plan for Groundfish Fishery in the Bering Sea and Aleutian Islands Area* and the *Fishery Management Plan for Groundfish Fishery of the Gulf of Alaska* (Section1.2).

These FMPs were prepared by the Council and approved by the Secretary of Commerce in 1978 and 1981, respectively. The BSAI FMP has been amended 71 times (Appendix A) and the GOA FMP 62 times (Appendix B). As necessary, rules and regulations were prepared to implement each of the FMP amendments. To comply with NEPA EISs were prepared for the original FMPs when they were approved by the Secretary of Commerce (NPFMC 1978, NPFMC 1981). An EIS or an EA was also prepared for every plan amendment (Appendices A and B). EAs were also prepared each time a regulation was changed. Since 1991, EAs resulting in a finding of no significant impact have been written for each year's TAC specifications (Section 1.6 of the SEIS and Appendix C).

WHAT ARE THE ALASKA GROUNDFISH FISHERIES?

What Fish are Harvested?

The Groundfish FMPs authorize and regulate the commercial harvest of various groundfish species. All of the finfish and invertebrates species in the area subject to the management plan are grouped into five categories: target, prohibited, other, forage fish, and non-specified. Harvest quotas, known as total allowable catches or TACs, are set annually for target species either individually or by species group. Prohibited species catch limits are set for certain species (e.g., salmon, herring, halibut, king crab, and Tanner crab) which are the target of other domestic fisheries, but are taken incidentally by groundfish fishing operations.

Principal groundfish fisheries are directed on walleye pollock, Pacific cod, sablefish, flatfish, Atka mackerel, and rockfish. Gear types used to harvest fish include bottom and pelagic trawls, hook-

and-line (longlines), pot, and jig. About a million metric tons of groundfish are taken annually from the combined BSAI and GOA fisheries (Section 1.6).

Where do the fisheries occur?

The groundfish fisheries occur in the North Pacific Ocean and Bering Sea in the U.S. Exclusive Economic Zone (EEZ) from 3 to 200 nautical miles offshore and between 50°N to 65°N latitude (Figure 1). The subject waters, or the action area, are divided into two management areas; the BSAI and the GOA (Section 1.6).

The BSAI groundfish fisheries effectively cover all the Bering Sea under U.S. jurisdiction, extending southward to include the waters south of the Aleutian Islands west of 170°W longitude to the border of the U.S. EEZ. The GOA FMP applies to the U.S. EEZ of the North Pacific Ocean, exclusive of the Bering Sea, between the eastern Aleutian Islands at 170°W longitude and Dixon Entrance at 132°40'W longitude. The area of the EEZ off Alaska is more than 900,000 square miles, or larger than the combined EEZs of the east and west coasts of the United States. The FMPs encompass those areas directly affected by fishing, and those areas that are likely affected indirectly by the removal of fish at nearby sites. The area affected by the fisheries necessarily includes adjacent State of Alaska and international waters.

Who Participates in the Fisheries?

Fishermen and processing workers from the states of Alaska, Washington, and Oregon participate in BSAI and GOA groundfish harvesting and fish processing (Section 3.10). In 1998, exvessel value of groundfish harvest by catcher vessels was $184 million, 40 percent of the total Alaska seafood exvessel value. The 1998 groundfish harvest produced an estimated $1 billion in processed groundfish product value for the catcher/processor and inshore processor/mothership sectors. Approximately 1.2 million metric tons (mt) of groundfish was landed in 1998; approximately 86 percent of the harvest came from the Bering Sea, with the remaining 14 percent from the GOA. Approximately 67 percent of this catch was pollock. Total harvesting and processing employment was estimated at approximately 10,000, with 60 percent of the employment going to Alaska region residents, and most of the remaining employment going to Washington and Oregon residents. Commercial fishing generates other economic activity in all three regions through support services, and generates tax revenue for the State of Alaska and many Alaskan communities.

Catcher Vessels: The harvesting fishing industry sector in 1998 included eight classes of catcher vessels based on primary gear types and fisheries, accounting for nearly 1,200 vessels. The four trawl classes focus on pollock and, to a lesser extent, Pacific cod and flatfish. Trawl catcher vessels deliver the vast majority of their fish to at-sea motherships, Bering Sea pollock shore plants, Alaska Peninsula and Aleutian Island shore plants, and Kodiak Island shore plants. Currently, trawlers generate approximately 70 percent of the exvessel revenue in groundfish fisheries. The remaining four vessel classes all use fixed-gear. Pot catcher vessels, which are primarily crab vessels that also fish part time in Pacific cod fisheries, account for 3.5 percent of exvessel value and payments to labor. Longline catcher vessels focus primarily on high-value sablefish, using longline gear in the GOA, and generate approximately 10 percent of total groundfish exvessel value and labor income. The other two fixed-gear catcher vessel classes (vessels less than 32 feet in length and vessels 33 to 59 feet in length) use longlines, pots, and jig gear and have by far the largest number of operations. Both of these fixed-gear classes participate in the groundfish fisheries to augment income from salmon, herring, and halibut fisheries. The larger of these two classes includes more

than 700 vessels and generates 16 percent of total exvessel revenue, primarily through landings of high-value sablefish and rockfish from the GOA.

Shore Plants and Motherships: Shore plants and motherships buy raw fish from catcher vessels and then process and freeze it for future use. Overall, shore plants and motherships are projected to generate more than $612 million in wholesale product revenues from groundfish, with nearly 60 percent or $361.9 million generated by the four shore plants and two inshore floating processors grouped as Bering Sea pollock inshore plants. In addition, these plants are projected to generate $144 million in payments to labor and more than 2,000 full-time equivalent jobs, annually. Shore plants in the Alaska Peninsula and Aleutian Islands region are the second largest group of shore plants in projected output value ($64 million wholesale), followed closely by Kodiak Island shore plants at $60 million. Shore plants in southcentral and southeast Alaska process much smaller volumes of groundfish (13,000 mt in southcentral and 20,000 mt in southeast). Because they process a large proportion of high-value species such as sablefish and rockfish, both groups are projected to generate more than 5 percent of the total wholesale value and payments to labor. Motherships, which process Bering Sea pollock almost exclusively, are projected to generate $58 million in wholesale value. In 1998, the processing sector included 56 shore-based processors, and four mothership processors (Section 3.10).

Catcher/Processors: In 1998, there were nearly 100 catcher/processor vessels, although the number was subsequently reduced by the American Fisheries Act. There are five classes of catcher/processors based on primary products and gear types. The 89 catcher/processors are projected to generate $594 million in total output (wholesale value), $223 million in payments to labor, and the equivalent of more than 2,000 full-time jobs, annually. Surimi and fillet trawl catcher/processors operate almost exclusively in BSAI pollock fisheries. The 12 surimi vessels are projected to generate more than 47 percent of total product value for catcher/processors, while fillet trawl vessels are projected to add 11 percent. Head-and-gut trawl catcher/processors, which focus more on flatfish, Pacific cod, and other species and do not generally target pollock, are projected to produce $157 million in product. Longline catcher/processors, which generally focus on Pacific cod (some also have large sablefish catches), are projected to generate more than $82 million in product. Pot catcher/processors, which fish for Pacific cod when crab fisheries are closed, are projected to be minor participants, with $4 million in output value.

Regions and Communities that Benefit from Fishing Activities: In addition to vessels and processors, regions that have significant involvement in BSAI and GOA groundfish fisheries include the Alaska Peninsula and Aleutian Islands, Kodiak archipelago, southcentral Alaska, southeast Alaska, Washington inland waters, and the Oregon coast. In general, regional impacts include not only direct effects from harvesting and processing, but also indirect effects generated through tax payments and as income cycles through the regional economies.

The Alaska Peninsula and Aleutian Islands region is in several respects the center of the Alaska groundfish fishery, accounting for more than four times the volume of groundfish processed inshore than in the other Alaska regions combined during 1991–1999. Relative dependence on the groundfish fishery varies: four of Alaska's top five groundfish landing ports are in this region, but some communities have little, if any, direct involvement. Fish tax from groundfish is an important underpinning of the regional economy, and groundfish vessel owners though few in number are important contributors to the economies of local communities. Kodiak is the dominant region for

groundfish in the GOA, but is also an important region for salmon, halibut, and other species. Groundfish accounts for roughly 30 to 45 percent of local processing and fish tax revenues. Participation in the groundfish fishery in southcentral and southeast Alaska is much more limited than in the Alaska Peninsula and Aleutian Islands and Kodiak Island regions. Both southcentral and southeast Alaska have significantly more diversified economies and relatively greater involvement in non-groundfish fisheries compared to the other two Alaska regions.

Regions in the Pacific Northwest also have important links to Alaska's groundfish fisheries. The Washington inland waters region as a whole, especially the greater Seattle area, is engaged in all aspects of the North Pacific groundfish fishery. While Washington is distant from the harvest areas, it is the organizational center of much of the industrial activity that comprises the human components of the fishery-specific industry sectors based in or linked to Seattle are substantially engaged in or dependent on the groundfish fishery. In terms of vessel and processor ownership, involvement in the Alaska groundfish fishery is arguably greater for Seattle than for any other community. However, if the size and diversity of Seattle's overall economy are considered, the groundfish fishery may be less important or vital for Seattle than for the other communities considered in the SEIS. The Oregon coast region has long had significant involvement in the fishery, from the development of joint ventures through the present catcher vessels that participate in a variety of fisheries across the Alaska regions.

In addition, six western Alaska Community Development Quota Groups (CDQs), representing 65 rural Alaskan villages, receive a share of the fisheries allocation to facilitate economic development in rural Alaska. CDQs have provided up to 1,000 jobs annually for western Alaska residents with annual wages of about $5–8 million; they have also used revenues to fund acquisition of vessels and seafood-related businesses, and to fund infrastructure improvements in western Alaska communities.

HOW ARE THE FISHERIES MANAGED?

The Magnuson-Stevens Act established the primary legal framework for the management of the BSAI and GOA groundfish fisheries. FMPs are intended to satisfy the requirements of the Act as well as other federal mandates including NEPA and Executive Order 12866 on Environmental Justice. The Magnuson-Stevens Act contains 10 national standards that serve as overarching policy goals for federal fisheries management. The Council was established by the Magnuson-Stevens Act to serve as a policy advisor to the Secretary of Commerce. Its many responsibilities include the preparation of FMPs for each fishery that requires fisheries conservation and management, as well as amendments to each plan. The Council employs a very public-oriented process. Its principal job is to make recommendations while attempting to balance sometimes conflicting policy objectives contained in the Magnuson-Stevens Act with those objectives contained in other federal laws. Fishery issues, information, and public proposals are brought to the Council. A system of scientific and industry experts review and advise the Council on how best to manage the fisheries and address management problems that arise. For a more detailed overview of the Magnuson-Stevens Act, other applicable federal laws, and the Council process, see Sections 2.3.2, 2.3.3, and 2.7.8, respectively.

Regulations specifically governing the groundfish fisheries in the EEZ off Alaska appear at 50 CFR 679. FMPs, amendments to FMPs, and regulatory amendments are developed by the Council, submitted to the Secretary of Commerce for review, and, if approved or partially approved,

implemented by federal regulations. Once the regulations are put into effect, NMFS has responsibility for the day-to-day management of the fisheries. Enforcement of the regulations is carried out jointly by NMFS and the U.S. Coast Guard. In cases where groundfish are harvested and processed in both the EEZ and state waters, these fisheries are cooperatively managed by NMFS and the Alaska Department of Fish & Game. For detailed information on how these resources are managed, see Section 2.7.

What are the environmental issues?

The first step in the SEIS preparation process is scoping. Scoping is designed to provide an opportunity for the public, other federal and state agencies, non-governmental organizations, and other interested groups to provide input on potential issues associated with the federal action. As described in the Scoping Report (NMFS 2000a), a review of all the scoping comments suggested 26 issue categories for purposes of consolidating comments and considering how best to address them in the SEIS. However, the review of public comments clearly indicated that among the 26 issue categories, a subset of nine issues was mentioned more frequently, suggesting that these issues are most important to the public (Section 1.7).

NMFS used the following key issues to develop the programmatic policy alternatives considered in the SEIS and to organize Chapter 4:

- effects on marine mammals,
- effects on seabirds,
- effects on target groundfish species,
- effects on nontarget groundfish species,
- effects on prohibited species,
- effects on essential fish habitat,
- effects on social economics of the fishery,
- effects on the marine ecosystem, and
- cumulative effects of the groundfish fisheries.

How do the current management plans address these issues?

Over the last 20 years, the fisheries regulations have been modified numerous times to address environmental and economic issues. Such actions include the establishment of:

- bottom trawl closure areas in the GOA and BSAI based on historic king crab abundance to reduce bycatch and enhance the recovery of depressed crab stocks;
- a domestic observer program for the purposes of collecting important fishery information;
- a GOA Pacific ocean perch rebuilding program;
- overfishing definitions to protect target groundfish stocks;
- a moratorium on new entry into the groundfish fisheries;
- specific allocations to inshore and offshore processing sectors to prevent preemption and provide economic stability to Alaska coastal communities;
- closure areas around Steller sea lion rookeries to protect these marine mammals from adverse effects of commercial groundfish fishing;
- prohibited species catch limits to reduce bycatch;
- an Individual Fishing Quota Program for the sablefish fishery;

- allocations of Pacific cod among the various gear types to promote economic stability, and
- closed areas to protect sensitive marine habitat.

A more detailed summary of the actions can be found in Section 2.4.1.3.

The Council and NMFS are not the only ones that have taken action. The U.S. Congress has also prioritized research, expanded programs, and developed measures that have addressed problems including the phase-out of foreign fishing, and the overcapacity of the groundfish harvesting and processing sectors.

WHAT ARE THE FISHERIES MANAGEMENT ALTERNATIVES CONSIDERED IN THE SEIS?

This programmatic SEIS examines six thematic alternative policy statements, each presented in a standard framework that provides management flexibility and allows for adaptation as new information on the ecosystem and the fisheries is obtained. Analyzing environmental impacts of fisheries management policies requires knowing what specific actions could be taken to implement them. Policies are, by definition, high-level, overall statements or plans embracing the general goals and procedures of a government body. Goals and objectives are often used to frame a policy, make it clearer and easier to understand, and provide specific directions for implementation through FMP amendments. Still, determining how a policy might affect the human environment is difficult to analyze without some indication of how it might be implemented.

In this SEIS, the programmatic alternatives are introduced, beginning with a presentation of current management policies, or the status quo regime. This management regime has evolved over the last 20 years and continues to be revised as new issues arise or new scientific information becomes available. This regime would continue to evolve if no additional policy actions were taken. Therefore, the programmatic alternatives in this SEIS consider potential changes in policy direction for fisheries management.

NMFS believes that the programmatic alternatives must provide an appropriate range of policy objectives so as to sharply define the fisheries management issues and provide a clear basis for choice among the alternatives. Each programmatic alternative focuses on a particular subset of policy objectives, which were selected to reflect issues raised in public comments. The environmental consequences that have been evaluated under a particular alternative regime (Chapter 4) serve to illustrate the general effects of those prioritized policy objectives. Given the range of policy alternatives in this SEIS, the outcome of emphasizing one set of objectives over others will illustrate the expected range of environmental effects that result from those decisions. Such effects could be offset, or reduced in terms of intensity, should NMFS or the Council choose to combine sets of objectives or measures to create a modified policy emphasizing a different set of policy objectives than those presented in this analysis. Likewise, NMFS or the Council could choose to mitigate any significant effects without requiring a formal change in policy. In either case, NMFS expects that many of the management actions taken during the next five years will likely fall within the broad range of effects described in this programmatic SEIS. The SEIS then serves as an overarching impact assessment of the Alaska groundfish fisheries on the natural and human environment.

Alternative 1 (Status Quo): Continue with Existing Management Policy

The current management policy of the Council and stated in the BSAI and GOA groundfish FMPs can be summarized as:

- Conform to the National Standards of the Magnuson-Stevens Act and to the Council's Comprehensive Fishery Management Goals;
- Promote conservation while providing for the optimum yield from the region's groundfish resources;
- Ensure that commercial, recreational, and subsistence benefits from the resources may be obtained on a continuing basis;
- Promote, where possible, efficient use of the fishery resources, but not solely for economic purposes;
- Promote fair and equitable allocation of identified available resources in a manner such that no particular group acquires an excessive share of the privileges;
- Base the fishery management plan on the best scientific information available;
- Minimize the chances of irreversible or long-term adverse effects on fishery resources and the marine environment;
- Make sure that multiple options are available with respect to future uses of the resources, and
- Develop regulations that will be long-term and stable with changes kept to a minimum.

The policy statements included in both groundfish FMPs are somewhat lengthy, complex, and include a number of secondary policy objectives. There are at least partially conflicting policy goals and objectives listed in the BSAI and GOA FMPs, reflecting guidance provided in the Magnuson-Stevens Act which requires the decisionmaker to strike an appropriate balance between protecting the biological resources, maintaining sustainable fisheries, and maximizing the social benefit of the fisheries. The FMPs and their implementing regulations describe a "management regime." The current regime is described in Section 2.7 as the "Federal Action of this Programmatic SEIS."

Evaluating New Policy Frameworks: The Common Denominator Among Alternatives to the Status Quo

To fulfill the purpose and need of this programmatic SEIS, NMFS has selected 14 policy objectives as the basis of the alternative management frameworks. These policy objectives were derived from a review of the Magnuson-Stevens Act, the NOAA Fisheries Strategic Plan, NOAA's National Bycatch Plan, the Endangered Species Act, the Marine Mammal Protection Act, the Council's Comprehensive Fishery Management Goals, and the Council's working definition for ecosystem-based management. For purposes of analysis, NMFS has identified specific primary objectives to define the policy emphasis of each programmatic alternative. By constructing each alternative around a different policy emphasis, the environmental issues raised during scoping can be clearly defined and examined. Such a presentation of alternatives also illustrates the flexibility of the policy framework to address particular environmental issues. It is the "common denominator" of Alternatives 2–6. The specific policy emphasis contained within each alternative regime presents a marked contrast to the other alternatives. If adopted, the new or changed policy emphasis could restrict the range of future management actions. Combining two or more suites of alternative policy objectives could similarly result in changes (though possibly less distinct from the status quo) to how the fisheries are managed and regulated compared to the status quo.

Each of the following alternatives is subject to four broad goals based on the requirements of the Magnuson-Stevens Act. These goals will serve the Council and NMFS as a measure of progress toward achievement of long-term fishery management objectives:

- Provide sound conservation of living marine resources.
- Provide socially and economically viable fisheries.
- Prevent human-caused threats to protected species.
- Maintain a healthy living marine resource habitat.

Alternative 2: Adopt a New Fisheries Management Policy Framework that Emphasizes Increased Protection to Marine Mammals and Seabirds

This policy places greater management emphasis to reduce conflicts and adverse interactions between groundfish fishing activities and marine mammals and seabirds. Objectives which provide greater emphasis in shaping policy decisions under Alternative 2 (e.g., to increase protection to Steller sea lions, other marine mammals, short-tailed albatross, and seabirds) are listed below:

- Emphasize protection of marine mammals and seabirds by reducing potential adverse impacts of groundfish harvesting; adverse impacts may include direct take, competition for prey, disturbance, and degradation of habitat (primary objective).
- Recover and maintain protected species populations.
- Reduce fishing conflicts that involve protected species and seabirds.
- Conform to the Magnuson-Stevens Act National Standards and the Council's Comprehensive Goals.

Alternative 3: Adopt a New Fisheries Management Policy Framework that Emphasizes Increased Protection to Target Groundfish Species

Alternative 3 places greater management emphasis on objectives aimed at preventing overfishing, maintaining healthy fish stocks of target species, and rebuilding depressed stocks of target species while providing the benefits of diverse and self-sustaining living marine resources. Those objectives used to provide greater emphasis (e.g., to increase protection to target groundfish species) in shaping policy decisions under Alternative 3 are listed below:

- Provide additional or improved protection for target species while also providing for sustainable fisheries (primary objective);
- Maintain healthy stocks important to commercial, recreational, and subsistence fisheries;
- Prevent overfishing and rebuild depressed stocks important to commercial, recreational, and subsistence fisheries;
- Increase long-term economic and social benefits to the nation from living marine resources;
- Protect, conserve, and restore living marine resource habitat;
- Establish minimum stock size thresholds for all managed groundfish stocks based on the best scientific information available;
- Maintain a margin of safety in recommending acceptable biological catches when the information concerning the resource is questionable, and obtain additional biological and socioeconomic data in such instances;
- Use the precautionary approach when making decisions; and

- Conform to the Magnuson-Stevens Act National Standards and NPFMC Comprehensive Goals.

Alternative 4: Adopt a New Fisheries Management Policy Framework that Emphasizes Increased Protection to Nontarget and Forage Species

This policy alternative places greater management emphasis on maintaining healthy fish stocks of nontarget and forage fish, reducing bycatch and bycatch mortality, reducing discards, and using a precautionary approach when making decisions while providing the benefits of diverse and self-sustaining living marine resources. Those objectives used to provide greater emphasis (e.g., to increase protection to nontarget groundfish species) in shaping policy decisions under Alternative 4 are listed below:

- Prevent overfishing, maintain healthy stocks, and rebuild depressed stocks of nontarget species (primary objective).
- Maintain healthy stocks important to commercial, recreational, and subsistence fisheries.
- Prevent overfishing and rebuild depressed stocks important to commercial, recreational, and subsistence fisheries.
- Increase long-term economic and social benefits to the nation from living marine resources.
- Protect, conserve, and restore living marine resource habitat.
- Minimize discards of fish harvested by developing management measures that encourage the use of gear and fishing techniques that minimize discards.
- Use the precautionary approach when making decisions.
- Conform to the Magnuson-Stevens Act National Standards and the Council's Comprehensive Goals.

Alternative 5: Adopt a New Fisheries Management Policy Framework that Emphasizes Increased Protection to Habitat

This policy alternative places greater emphasis on objectives to protect, conserve, and restore living marine resource habitat while providing the benefits of diverse and self-sustaining living marine resources. Those objectives used to provide greater emphasis (e.g., to increase protection to habitat, including essential fish habitat) in shaping policy decisions under Alternative 5 are listed below:

- Protect and restore essential fish habitat while accruing benefits to marine ecosystems (primary objective).
- Protect, conserve, and restore living marine resource habitat.
- Use the precautionary approach when making decisions.
- Conform to the Magnuson-Stevens Act National Standards and the Council's Comprehensive Goals.

Alternative 6: Adopt a New Fisheries Management Policy Framework that Emphasizes an Increase in Socioeconomic Benefits

Two distinct alternative management strategies are illustrated under Alternative 6. Alternative 6.1 is much broader than 6.2, in terms of both the range of socioeconomic benefits that would be considered and the time period over which benefits would be considered. Alternative 6.1 would

place greater emphasis on increasing the long-term net economic benefits from the commercial groundfish fisheries. It seeks to increase socioeconomic benefits without increasing total allowable catch (e.g., get more value from what is currently harvested). Alternative 6.2 emphasizes a narrower policy that increases economic benefits in the short-term by adopting a more aggressive harvesting strategy.

Alternative 6.1: Those objectives that provide greater emphasis under Alternative 6.1 are listed below:

- Increase the long-term net economic benefits from the commercial groundfish fisheries to those who harvest and process groundfish, to the associated fishing communities, and to those who consume groundfish seafood products.
- Prevent preemption of one sector or fishing community by another.
- Maintain or increase levels of protection for protected species, target species, nontarget species, and their habitat.
- Conform to the Magnuson-Stevens Act National Standards and the Council's Comprehensive Goals.

Alternative 6.2: This narrower alternative policy places greater emphasis on the objective of increasing the short-term net economic benefits from the commercial groundfish fisheries to those who harvest and process groundfish, to the associated fishing communities, and to those who consume groundfish seafood products by allowing a substantially more aggressive harvest strategy. Those objectives that provide greater emphasis in shaping policy decisions under Alternative 6.2 are listed below:

- Maximize harvest of groundfish stocks while preventing overfishing (primary objective).
- Prevent overfishing and rebuild depressed groundfish stocks important to commercial, recreational, and subsistence fisheries.
- Maintain or increase levels of protection for protected species, target species, nontarget species, and their habitat.
- Conform to the Magnuson-Stevens Act National Standards and the Council's Comprehensive Goals.

POSSIBLE EFFECTS OF FISHERY MANAGEMENT ALTERNATIVES

Potential impacts of the six programmatic policy alternatives in this SEIS are analyzed in terms of fisheries management actions that could be taken to implement each policy alternative. At least one hypothetical, or model management regime was developed for each policy alternative for purposes of analysis and comparison to the current, or status quo, regime. Each alternative contains a number of specific management actions that could serve as a potential amendment to the groundfish FMPs. These model regimes were developed by agency analysts with expertise in a particular environmental issue, for the purpose of evaluating at least one strategy for achieving a particular policy emphasis. A description on how these regimes were developed, modeled, and the results of their analysis can be found in Chapter 4 of the SEIS.

Analysis of these model regimes is intended to illustrate the types of environmental effects that can be anticipated should specific fisheries management actions be pursued in the future. Many potential

combinations of management actions could comprise an alternative management regime. Relying on agency experts and public comments received during the scoping of this SEIS led to the development of these alternative regimes for analytical purposes; they are not intended to represent all possible combinations of actions. As a planning document, this programmatic SEIS provides the decisionmakers and the public with a broad range of potential policy objectives and potential management actions. The direct, indirect, and cumulative effects analyzed in this SEIS illustrate the environmental consequences associated with emphasizing certain policy objectives more heavily than others. However, the SEIS does not prevent the Council or NMFS from taking other management actions. In such cases, the accompanying NEPA analysis would fully evaluate a specific proposed action and its environmental impacts.

Analytical Approach to Evaluating Alternatives

The analytical approach for simulating current groundfish management in the North Pacific U.S. EEZ involves considering interactions among a large number of species (including target, nontarget, and prohibited), areas, and gear types. To evaluate the consequences of alternative management regimes selected in this SEIS, modeling was used to predict the likely outcome of management decisions using statistics on historical catch of different species by gear types and areas. Management of the Alaska groundfish fisheries is complex given the large numbers of species, areas, and gear types. The managers schedule fisheries openings and closures to maximize catch subject to catch limits and other constraints. These management actions are based on expectations about the array of species likely to be captured by different gear types and the cumulative effect that each fishery has on the allowable catch of each individual target species and other species groups. Management decisions were simulated by an in-season management model that predicts capture of target and nontarget species by different fisheries based on historical catch data by area and gear type. The groundfish population abundance for each alternative regime was forecast for a five-year period beginning from the present. This approach provides a reasonable representation of the current fisheries management practice for dealing with the multi-species nature of catch in target fisheries. In addition to the model and its projected results, agency analysts also used the scientific literature, ongoing research, and the professional opinion of fishery experts in their respective fields to perform qualitative assessments.

More detailed information on the analytical approach used by the agency analysts in preparing this SEIS can be found in Section 4.1.6.

Summary of Environmental Consequences

Table 1 presents a summary of the environmental consequences for each of the six alternatives. The table format is organized by categories of effects on the natural environment and human environment (e.g., marine mammals, seabirds, target species, non-target species, prohibited species, habitat, ecosystem, and socioeconomic), and allows for a comparison of potential effects between alternatives. For each category of the natural and socioeconomic environment, a number of potential effects were chosen for analysis based on issues identified during scoping and the expertise of the SEIS analysts. The potential direct and indirect effects are summarized, followed by a summary of cumulative effects. For Alternative 1(the status quo alternative), potential effects are described as either significant (beneficial or adverse), conditionally significant (beneficial or adverse), not significant, or unknown. The term conditionally significant is used because in many cases, the likelihood and magnitude of effects is based on specific assumptions and limited data. The term unknown is used when not enough information is available to reach a conclusion of any kind on the

likelihood and magnitude of effects. Alternatives 2 through 6 are evaluated in comparison to the status quo alternative, and whether conditions for each of the natural and socioeconomic environment categories were better, worse, or similar. In Chapter 4, a ranking system using values from -2 to +2 was used to compare Alternatives 2 through 6 to Alternative 1.

The basic concept behind cumulative effects assessment is that proposed fishery management actions are evaluated in association with other events, providing a bigger picture that includes the additive result of other actions, each exerting its beneficial or adverse environmental influence over time. Cumulative effects take into account the accumulation and/or combination of all identified direct and indirect effects generated by two or more actions affecting a given resource, ecosystem, or human community. Identifying relevant external factors (including human activities and natural events, such as other fisheries, subsistence harvests, commercial shipping, oil and gas leasing, climatic shifts, etc.) that could act in combination with the direct and indirect effects of the alternatives being considered is a key step in assessing cumulative effects. For more information on the cumulative effects analysis, see Section 4.13 of the SEIS and Appendix J.

Comparison of Effects of Management Alternatives Compared to Status Quo

Table 2 provides a summary of the rankings for each effect relative to the status quo by alternative and class of resources or human use characteristic.(e.g., marine mammals, seabirds, target species, non-target species, prohibited species, habitat, ecosystem, and socioeconomic). The marine mammal class was further partitioned into two sub-classes to distinguish effects of the alternative on primary pinnipeds that more frequently interact with groundfish fisheries (Steller sea lion, northern fur seal, and harbor seal) from effects on other marine mammals. The socioeconomic class was divided into effects on fishing industry sectors and consumers, and effects on regions and communities.

The rankings for each resource or characteristic class are presented in the table. A single ranking value was used for three analysis classes: habitat, ecosystem, and socioeconomic. The remaining analysis classes included several species groups (species or species complexes). As a result the table reflects the percentage of groups that were ranked as being worse than the status quo (value less than +0), similar to the status quo (+0), or better than the status quo (value greater than +0). The rankings in Table 2 should not be confused with statements regarding the significance of the effects since they only represent a direction of change relative to the status quo. The table is color coded to highlight the direction of change between each of Alternatives 2 through 6, and the status quo (conditions worse than status quo = orange, conditions similar to status quo = yellow, and conditions better than status quo = green). Where an analysis class contained several species groups, cells are color coded when 40 percent or more of the species or resources fell into one of the three possible ranking categories (<0, 0, or >0).

The use of colors in Table 2 for each of the alternatives illustrates that there are environmental consequences for any management action taken. Management of the groundfish fisheries off Alaska under the FMPs is a reflection of the Council's attempt to strike a balance among sound conservation of living marine resources, socially and economically viable fisheries, protected species, and maintaining a healthy marine ecosystem. This is the fundamental premise of the Magnuson-Stevens Act. Given the diversity of the environment and the complexity of the fisheries, any change in fisheries management is likely to benefit certain aspects of the natural and human environment, and adversely affect other aspects to some degree.

WHAT ARE THE NEXT STEPS IN THE SEIS PROCESS?

This executive summary is a snapshot of the contents of the Alaska Groundfish Fisheries Draft Programmatic SEIS published in January 2001. Comments on the draft SEIS will be accepted January 26, 2001through April 26, 2001. Everyone is invited to submit comments to NMFS. During the comment period, public hearings will be held at various locations in Alaska and the Pacific Northwest. These meetings will offer a forum to meet members of the SEIS team, ask questions, and provide an opportunity for the public to express concerns and recommendations. Comments received at the hearings and in writing will be addressed in the Final Programmatic SEIS.

Your Opportunity to Contribute

The future of the Alaska groundfish fisheries is important to everyone. The public has been involved in the management of the groundfish fisheries at the Council level for more than 20 years and has been involved in the NEPA process from the beginning of this SEIS in the fall of 1999. From the scoping meetings conducted in January 2000 through the comment period on the scoping report, NMFS has solicited and incorporated public comments into this SEIS and the decision process.

Choosing a preferred alternative is a difficult task. This programmatic SEIS has served as an environmental review of the BSAI and GOA groundfish FMPs. The SEIS describes the evolution of fisheries management in Alaska and identifies the environmental issues that could face managers and the stakeholders of these resources in the future. Five alternative fishery management policy frameworks have been crafter around the key environmental issues and emphasized policy objectives as a basis for hypothetical model management regimes used in the SEIS analysis. These environmental consequences are discussed in detail in this SEIS.

NMFS intends to recommend a preferred programmatic alternative in the Final SEIS. Please provide your comments on the issues presented in this summary and the Alaska Groundfish Fisheries Draft Programmatic Supplemental Environmental Impact Statement. This SEIS is a large document and contains a large amount of information regarding Alaska groundfish fisheries management. The complexities of the fishery itself have required a similarly complex program for effective management. We hope you take the time to review the information contained in this document and that you find it to be a useful planning and reference tool.

For more information...

Through April 26, 2001, you can request more information about this SEIS, be added to the SEIS mailing list, learn more about the project, submit your comments, and become involved in the process by:

- Visiting the NMFS Alaska Region website at: www.fakr.noaa.gov

- Mailing your comments to:
  National Marine Fisheries Service
  Alaska Regional Office
  P.O. Box 21668
  Juneau, AK 99802
  Attn: Lori Gravel

- Faxing your comments to:
  National Marine Fisheries Service
  Alaska Regional Office
  (907) 586-7249
  Attn: Lori Gravel

Dates and locations of the public meetings will be announced. Visit the website or contact NMFS to be sure to receive notice of these meetings.